

What is claimed is:

1. A drum shell comprising:

a rigid, hollow body disposed about an axis and having first and second opposing opened ends, the body having an inner surface and an outer surface, at least the outer surface being of convoluted form.

2. The drum shell of claim 1, wherein the convoluted form is defined by channels in the body, the channels extending in a direction of the axis.

3. The drum shell of claim 2, wherein the channels extend radially to the outer surface.

4. The drum shell of claim 1, wherein the channels are evenly spaced about a periphery of the body and are sized to receive drum tensioning members therein.

5. The drum shell of claim 2, wherein reinforcing structure is provided in each channel, the reinforcing structure including a bore therethrough associated with each channel for receiving a drum tensioning member.

6. The drum shell of claim 5, wherein the reinforcing structure is an annular member mounted to the body between the opposing ends and disposed about the axis.

7. The drum shell of claim 5, wherein the reinforcing structure includes a separate plate member disposed in each said channel.

8. The drum shell of claim 1, further comprising a rigid inner sleeve disposed within the hollow body so as to define a cavity between an outer surface the inner sleeve and the inner surface of the body.

9. The drum shell of claim 8, further including a material at least partially filling the cavity.

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10. The drum shell of claim 1, wherein the outer surface is a substantially smooth surface.

11. A drum comprising:

a rigid, hollow body disposed about an axis and having first and second opposing opened ends of generally circular form, the body having an inner surface and an outer surface, the outer surface being of convoluted form defined by a plurality of channels formed in the body, the channels extending in a direction of the axis,

a drum head membrane covering each of the first and second ends,

a ring mounted on each of the first and second ends so as to secure each drum head membrane to the body, each ring including a tensioning member receiving structure, and

a plurality of tensioning members, a tensioning member being received in an associated channel and a first end of each tensioning member being received by the tensioning member receiving structure of each ring, said tensioning members being constructed and arranged to be moved with respect to the body to adjust tension of the drum head membranes.

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12. The drum of claim 11, wherein the channels extend radially to the outer surface.

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13. The drum of claim 11, wherein the channels are evenly spaced about a periphery of the body.

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14. The drum of claim 11, wherein reinforcing structure is provided in each channel, the reinforcing structure including internal threads associated with each channel for receiving a threaded end of an associated tensioning member.

15. The drum of claim 14, wherein the reinforcing structure is an annular member mounted to the body substantially midway between the opposing ends and disposed about the axis.

15. The drum of claim ¹⁴15, wherein the threaded end of the each tensioning member is externally threaded and is threadedly engaged with internal threads, such that by adjusting the threaded engagement of the tensioning members with internal threads, the stretching tension on the drum head membranes can be adjusted.

16. The drum of claim ¹³16, wherein the reinforcing structure includes a separate plate member disposed in each channel.

17. The drum of claim ¹⁶17, wherein the threaded end of each tensioning member is externally threaded and is threadedly engaged with the internal threads, such that by adjusting the threaded engagement of the tensioning members with the sleeves, the stretching tension on the drum head membranes can be adjusted.

18. The drum of claim 11, further comprising a rigid inner sleeve disposed within the hollow body so as to define a cavity between an outer surface the inner sleeve and the inner surface of the body.

19. The drum of claim ¹⁸19, further including a material at least partially filling the cavity.

20. The drum of claim ¹⁰20, wherein the outer surface is a substantially smooth surface.

21. The drum of claim ¹⁰21, wherein each tensioning member has a threaded end having a certain pitch diameter, a portion of the tensioning member having a diameter less than the pitch diameter.

22. The drum of claim ¹⁰22, wherein each tensioning member has a longitudinal axis and has a portion that is bent with respect to the axis.

23. The drum of claim ¹⁰23, wherein each tensioning member is of a material having a tensile modulus lower than steel.

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25. The drum of claim 14, further including spring structure between each sleeve and the reinforcing structure so as to be compressed when a tensioning member is threadedly engaged with the internal threads.

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26. The drum of claim 11, wherein the first end of each tensioning member includes a head, and a spring structure is provided between the head of each tensioning member and a surface defining an associated tensioning member receiving structure.

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27. The drum of claim 17, further comprising hydraulic means for balancing tension of the tensioning members, the means for balancing including a fluid chamber associated with each tensioning member, the fluid chambers being interconnected so as to share fluid pressure as the tensioning members are moved.

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28. The drum of claim 27, wherein the means for balancing includes a piston and cylinder arrangement associated with each tensioning member.

29. The drum of claim 27, wherein reinforcing structure is provided in each channel, the reinforcing structure being in the form of an annular member mounted to the body substantially midway between the opposing ends and disposed about an the axis, the annular member including internal threads associated with each channel for receiving a threaded end of an associated tensioning member, movement of the tensioning member with respect to the internal threads causing changes in the fluid pressure.

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30. The drum of claim 29, wherein the annular ring defines a manifold to fluidly interconnect the fluid chambers.

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31. The drum of claim 30, wherein the manifold includes an air bleed port and a fluid fill port.

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32. The drum of claim 11, wherein reinforcing structure is provided in each channel,

the reinforcing structure including a internal threads associated with each channel for receiving a threaded end of an associated tensioning member.

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~~33~~. The drum of claim ~~32~~, wherein each tensioning member includes a visual indicator indicative of an amount of threaded engagement of the tensioning member.

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